

ABSTRACT

A medical device coated with one or more antibodies and one or more layers of a matrix is disclosed. The antibodies or fragments thereof react with an endothelial cell surface antigen. Also disclosed are compositions and methods for producing the medical device. The matrix coating the medical device may be composed of a synthetic material, such as a fullerene, or a naturally occurring material. The fullerenes range from about C60 to about C100. The medical device may be a stent or a synthetic graft. The antibodies promote the adherence of cells captured *in vivo* on the medical device. The antibodies may be mixed with the matrix or covalently tethered through a linker molecule to the matrix. Following adherence to the medical device, the cells differentiate and proliferate on the medical device. The antibodies may be different types of monoclonal antibodies. By facilitating adherence of cells to the surface of the medical device, the disclosed methods and compositions will decrease the incidence of restenosis as well as other thromboembolic complications resulting from implantation of medical devices.